II. REMARKS

Claims 1-43 are pending, and no claims are cancelled or amended. The Applicants' attorney has added new claims 38-43, and thanks the Examiner for speaking with him and one of the Applicants, Mr. Chris Wiklof, on 04 May 2004. In light of the following, all of the claims are now in condition for allowance, and, therefore, the Applicants' attorney requests the Examiner to withdraw all of the outstanding rejections.

Rejection of Claims 1-37 Under 35 U.S.C. § 112 First and Second Paragraphs As Being Based On A Disclosure That Is Non-enabling And As Being Incomplete For Omitting Essential Elements

As discussed below, the Applicants' attorney disagrees with this rejection. The Applicant's attorney shows below that all of the independent claims read on the specification, and, therefore, that the disclosure enables the claims and that the claims are complete. But the Applicants' attorney does not intend for this analysis to limit the scope of the claims to the embodiments disclosed in the specification.

Claim 1

Claim 1 recites a scanner comprising a beam generator operable to generate a scan beam, a beam-reflector assembly having a first magnet and operable to sweep the scan beam, and a beam-sweep mechanism having a permanent second magnet and operable to activate the beam-reflector assembly by exerting a first magnetic force and only the first magnetic force on the first magnet.

For example, referring, *e.g.*, to FIGS. 21-25A, scanner 3000 includes a laser diode (beam generator) 3062, a beam-reflector assembly 3040 having a (first) magnet 3048, and a beam-sweep mechanism 3042 having a permanent (second) magnet 3052. The laser diode (beam generator) 3062 is operable to generate a scan beam 3070, and the beam-reflector assembly 3040 is operable to sweep the scan beam 3070 with a mirror 3046. The beam-sweep mechanism 3042 is operable to cause the mirror 3046 to rotate back and forth about a shaft 3050 in an underdamped manner (activate the beam-reflector assembly), and thus sweep the scan beam 3070, by moving the permanent (second) magnet 3052 into a sweep position (FIG. 25A) and, with the magnet 3052, exerting a

repelling (first) magnetic force and only the repelling (first) magnetic force on the (first) magnet 3048.

Claim 10

Claim 10 recites a scanner comprising a beam generator operable to generate a scan beam, a beam detector operable to read a return beam reflected from a target, a beam-reflector assembly having a mirror and a first magnet, the mirror operable to sweep the scan beam across the target, and a beam-sweep mechanism having a second magnet and operable to retain the mirror of the beam-reflector assembly in and return the mirror to a home position by attracting the first magnet with the second magnet, and rotate the mirror of the beam-reflector assembly back and forth in an underdamped manner by repelling the first magnet with the second magnet.

For example, referring, *e.g.*, to FIGS. 21-25A, scanner 3000 includes a laser diode (beam generator) 3062, a photo diode (beam detector) 3064, a beam-reflector assembly 3040 having a mirror 3046 and a (first) magnet 3048, and a beam-sweep mechanism 3042 having a (second) magnet 3052. The laser diode (beam generator) 3062 is operable to generate a scan beam 3070, and the photo diode (beam detector 3064 is operable to read a return beam 3072 (dashed line in FIG. 24) reflected from a target. The mirror 3046 is operable to sweep the scan beam 3070 across the target. The beam-sweep mechanism 3042 is operable to retain the mirror 3046 in and return the mirror to a home position by attracting the (first) magnet 3048 with the (second) magnet 3052, and to rotate the mirror 3046 back and forth about a shaft 3050 in an underdamped manner, and thus sweep the scan beam 3070, by moving the permanent (second) magnet 3052 into a sweep position (FIG. 25A) and, with the magnet 3052, exerting a repelling (first) magnetic force on the (first) magnet 3048.

Claim 15

Claim 15 recites a scanner comprising a beam generator operable to generate a scan beam, a beam-reflector assembly having a first magnet and operable to sweep the scan beam, and a beam-sweep mechanism having a second magnet configured for mechanical movement between a first position in which the second magnet attracts the first magnet and a second position in which the second magnet repels the first magnet.

For example, referring, *e.g.*, to FIGS. 21-25A, scanner 3000 includes a laser diode (beam generator) 3062, a beam-reflector assembly 3040 having a (first) magnet 3048, and a beam-sweep mechanism 3042 having a (second) magnet 3052. The laser diode (beam generator) 3062 is operable to generate a scan beam 3070, and the beam-reflector assembly 3040 is operable to sweep the scan beam 3070 with a mirror 3046. The (second) magnet 3052 of the beam-sweep mechanism 3042 is configured for mechanical movement between a first position (home position in FIG. 25A) in which the (second) magnet 3052 attracts the (first) magnet 3048 and a second position (sweep position in FIG. 25A) in which the (second) magnet 3052 repels the (first) magnet 3048.

Claim 21

Claim 21 recites a method comprising generating a scan beam and sweeping the beam across a target by moving a magnet to exert a first magnetic force and only the first magnetic force on a beam reflector, the magnet being unattached to the beam reflector.

For example, referring, *e.g.*, to FIGS. 21-25A, a laser diode 3062 generates a scan beam 3070, and a beam-sweep mechanism 3042 causes a mirror (beam reflector) 3046 to sweep the scan beam 3070 across a target by moving a magnet 3052 into a sweep position (FIG. 25A) to exert a repelling (first magnetic force) and only the repelling (first magnetic force) on a magnet 3048 of the mirror (beam reflector) 3046. The magnet 3052 (the magnet that is moved) is unattached to the mirror (beam reflector) 3046.

Claim 26

Claim 26 recites a method comprising retaining a mirror in a home position with an attractive magnetic force from a magnet, rotating the mirror back and forth with a repelling magnetic force from the magnet to sweep a scan beam across a target and to direct a return beam reflected from the target to a beam detector, and returning the mirror to the home position with the attractive magnetic force from the magnet.

For example, referring, *e.g.*, to FIGS. 21-25A, in a home position (FIG. 25A), a magnet 3052 attracts a magnet 3048 to retain a mirror 3046 in a home position (FIG. 22). In a sweep position (FIG. 25A), the magnet 3052 repels the magnet 3048, thus causing the mirror to rotate back and forth (FIG. 24) about a shaft 3050, to sweep a scan beam 3070 across a target, and to direct a return beam 3072 (dashed line in FIG. 24) reflected from

the target to a photo diode (beam detector) 3064. Moving the magnet 3052 back its home position (FIG. 25A) re-exerts the attractive magnetic force on the magnet 3048 and thus returns the mirror 3046 to its home position (FIG. 22).

Claim 33

Claim 33 recites a scanner comprising a beam generator operable to generate a scan beam, a beam-reflector assembly having a first magnet and operable to sweep the scan beam, and a non-motorized beam-sweep mechanism having a permanent second magnet and operable to activate the beam-reflector assembly by exerting a first force on the first magnet with the second magnet.

For example, referring, *e.g.*, to FIGS. 21-25A, scanner 3000 includes a laser diode (beam generator) 3062, a beam-reflector assembly 3040 having a (first) magnet 3048, and a non-motorized beam-sweep mechanism 3042 having a permanent (second) magnet 3052. The laser diode (beam generator) 3062 is operable to generate a scan beam 3070, and the beam-reflector assembly 3040 is operable to sweep the scan beam 3070 with a mirror 3046. The beam-sweep mechanism 3042 is operable to cause the mirror 3046 to rotate back and forth about a shaft 3050 in an underdamped manner (activate the beam-reflector assembly), and to thus sweep the scan beam 3070, by moving the (second) magnet 3052 into a sweep position (FIG. 25A) and exerting a repelling (first magnetic) force on the (first) magnet 3048 with the (second) magnet 3052.

Claim 36

Claim 36 recites a method comprising retaining a mirror in a home position with an attractive magnetic force from a magnet, the mirror rotatable about an axis, moving the magnet in a dimension that is substantially parallel to the axis such that the magnet exerts a repelling magnetic force on the mirror, the repelling magnetic force causing the mirror to rotate back and forth such that the mirror sweeps a scan beam across a target and directs a return beam reflected from the target to a beam detector, and moving the magnet in the dimension such that the magnet exerts the attractive magnetic force on the mirror, the attractive magnetic force causing the mirror to return to the home position.

For example, referring, *e.g.*, to FIGS. 21-25A, in a home position (FIG. 25A), a magnet 3052 attracts a magnet 3048 to retain a mirror 3046 in a home position (FIG. 22),

the mirror 3046 being rotatable about a shaft (axis) 3050. As shown in FIG. 25A, moving the magnet 3052 downward (dimension substantially parallel to the axis) causes the magnet 3052 to exert a repelling magnetic force on the magnet 3048 of the mirror 3046. As shown in FIG. 24, this repelling magnetic force causes the mirror 3046 to rotate back and forth such that the mirror 3046 sweeps a scan beam 3070 across a target and directs a return beam 3072 (dashed line in FIG. 24) reflected from the target to a photo diode (beam detector) 3064. As shown in FIG. 25A, moving the magnet 3052 upward (dimension substantially parallel to the axis) causes the magnet 3052 to exert an attractive magnetic force on the magnet 3048 of the mirror 3046. This attractive magnetic force causes the mirror 3046 to return to its home position (FIG. 22).

Rejection of Claims 1-3, 5, and 21-23 Under 35 U.S.C. § 103(a) As Being Unpatentable Over U.S. Patent 5,280,165 to Dvorkis et al.

As discussed below, the Applicants' attorney disagrees with this rejection.

Claim 1

Claim 1 recites a beam-sweep mechanism having a permanent second magnet.

For example, referring, *e.g.*, to FIGS. 21-25A, a beam-sweep mechanism 3042 has a permanent (second) magnet 3052. When the magnet 3052 is moved into a sweep position (FIG. 25A), it exerts a repelling force on another magnet 3048 that is attached to a mirror 3046, thus causing the mirror to rotate back and forth about a shaft 3050 in an underdamped manner. The rotating mirror 3046 sweeps a scan beam 3070.

In contrast, Dvorkis neither discloses nor suggests a beam-sweep mechanism having a permanent second magnet. Referring, *e.g.,* to FIG. 5, col. 9, lines 28-68, Dvorkis discloses a stationery electromagnetic coil 131, which when energized forms an electromagnet. When the coil 131 is energized with an AC signal (*see e.g.,* col. 10 lines 1-3 and 28-30), it alternately attracts and repels a magnet 135, and thus causes a reflective component 129 to vibrate and to sweep a beam from a laser 147 back and forth. But contrary to the Examiner's assertion, it is not obvious to replace the electromagnetic coil 131 with a permanent magnet because doing so would render Dvorkis' scanner inoperable. Specifically, depending on the orientation of its N an S poles, the permanent magnet that replaces the coil 131 will either attract or repel the component 129 (via the magnet 135)

into a stationery position, and the component 129 cannot sweep a beam when stationery. Consequently, Dvorkis does not motivate one to replace the coil 131 with a permanent magnet.

Claims 2-3 and 5

These claims are patentable by virtue of their dependencies from claim 1.

Claim 21

Claim 21 recites sweeping a beam by moving a magnet to exert a magnetic force on a beam reflector, the magnet being unattached to the beam reflector.

For example, referring, *e.g.*, to FIGS. 21-25A, a beam-sweep mechanism 3042 has a magnet 3052 that is unattached to a mirror 3046. When the magnet 3052 is moved into a sweep position (FIG. 25A), it exerts a repelling force on another magnet 3048 that is attached to the mirror 3046, thus causing the mirror to rotate back and forth about a shaft 3050 and to sweep a scan beam 3070.

In contrast, Dvorkis neither discloses nor suggests sweeping a beam by moving a magnet to exert a magnetic force on a beam reflector where the magnet is unattached to the beam reflector. Referring, *e.g.,* to FIG. 5, col. 9, lines 28-68, Dvorkis discloses a stationery electromagnetic coil 131, which when energized forms an electromagnet. When the coil 131 is energized with an AC signal (*see e.g.,* col. 10 lines 1-3 and 28-30), it alternately attracts and repels a magnet 135, and thus causes a reflective component 129 to vibrate and to sweep a beam from a laser 147 back and forth. But contrary to the Examiner's assertion, it is not obvious to replace the electromagnetic coil 131 with a movable magnet because there is no suggestion or motivation to do so. Because Dvorkis scanner drives the coil 131 with an AC signal, the coil can vibrate the component 129 while the coil is stationery. Therefore, making the coil 131 movable offers no apparent improvement in the scanner's operation. Consequently, because making the coil 131 movable would add complexity to Dvorkis's scanner without any apparent corresponding improvement, Dvorkis does not motivate one to make the coil 131 movable.

Claims 22-23

These claims are patentable by virtue of their dependencies on claim 21.

Conclusion

In light of the foregoing, claims 1-37 as previously pending and new claims 38-43 are in condition for full allowance, which is respectfully requested.

In the event additional fees are due as a result of this amendment, payment for those fees has been enclosed in the form of a check. Should further payment be required to cover such fees you are hereby authorized to charge such payment to Deposit Account No. 07-1897.

DATED this 16th day of July, 2004.

Respectfully Submitted,

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